EF5407: TOPICS IN MICROECONOMICS

Effective Term
Semester B 2024/25

Part I Course Overview

Course Title
Topics in Microeconomics

Subject Code
EF - Economics and Finance
Course Number
5407

Academic Unit
Economics and Finance (EF)

College/School
College of Business (CB)

Course Duration
One Semester

Credit Units
3

Level
P5, P6 - Postgraduate Degree

Medium of Instruction
English

Medium of Assessment
English

Prerequisites
EF5471 Advanced Microeconomics

Precursors
Nil

Equivalent Courses
Nil

Exclusive Courses
Nil

Part II Course Details

Abstract
This course covers fundamental tools of game theory, information economics and mechanism design, and provides students with solid skills to analyse strategic situations. Concepts such as dominance, rationality, backward induction, Nash

equilibrium, subgame perfection, commitment, credibility, adverse selection, moral hazard and signalling will be discussed and applied to economic models, business cases and real-life examples drawn from economics, business, politics, sports and elsewhere. The course also encourages discovery learning, which takes place when students use their knowledge and skills in game theory to discover solutions to problems in business and life.

Course Intended Learning Outcomes (CILOs)

	CILOs	Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	think strategically;		x	x	
2	understand basic concepts in game theory, information economics and mechanism design;		x	x	
3	apply tools in game-theoretic analysis to identify the "equilibrium" situations, i.e. strategies that are mutual best responses for the players, in various types of games with different temporal and information structures;		x		x
4	formalize real-life social, economic and business situations as well as research questions related to economics, finance and business strategy, into game-theoretic models in order to explain observed strategic behaviours and/or recommend strategies.		x		x

A1: Attitude
Develop an attitude of discovery/innovation/creativity, as demonstrated by students possessing a strong sense of curiosity, asking questions actively, challenging assumptions or engaging in inquiry together with teachers.

A2: Ability
Develop the ability/skill needed to discover/innovate/create, as demonstrated by students possessing critical thinking skills to assess ideas, acquiring research skills, synthesizing knowledge across disciplines or applying academic knowledge to real-life problems.

A3: Accomplishments
Demonstrate accomplishment of discovery/innovation/creativity through producing /constructing creative works/new artefacts, effective solutions to real-life problems or new processes.

Learning and Teaching Activities (LTAs)

	LTAs	Brief Description	CILO No.	Hours/week (if applicable)
1	Lectures	The lectures introduce fundamental concepts in game theory, information economics and mechanism design to students and encourage them to think critically and logically, with the goal to guide students to develop their ability to solve new problems of economic strategy by themselves.	1, 2, 3, 4	

2	Homework	Homework will largely consist of applications of the material discussed in class, in which students will be asked to apply the basic tools of game theory to analyze e.g. specific industry problems, business practices etc.	1, 2, 3, 4	
3	Term Paper	Students need to write a term report on game theory, information economics, or mechanism design. The topic for the project can be, but not restricted to, any real-life application of game theory, information economics, or mechanism design.	1, 2, 3, 4	

Assessment Tasks / Activities (ATs)

	ATs	CILO No.	Weighting (%)	Remarks (e.g. Parameter for GenAI use)
1	Midterm Examination	1, 2, 3, 4	50	3-hour written exam arranged towards the later weeks of the semester
2	Term Paper	1, 2, 3, 4	30	
3	Homework	1, 2, 3, 4	20	

Continuous Assessment (%)

100

Assessment Rubrics (AR)

Assessment Task

Midterm Examination (for students admitted before Semester A 2022/23 and in Semester A 2024/25 & thereafter)

Excellent

(A+, A, A-) Strong evidence of original thinking; good organization, capacity to analyse and synthesize; superior grasp of subject matter; evidence of extensive knowledge base.

Good

(B+, B, B-) Evidence of grasp of subject, some evidence of critical capacity and analytic ability; reasonable understanding of issues; evidence of familiarity with literature.

Fair

(C+, C, C-) Student who is profiting from the university experience; understanding of the subject; ability to develop solutions to simple problems in the material.

Marginal

(D) Sufficient familiarity with the subject matter to enable the student to progress without repeating the course.

Failure

(F) Little evidence of familiarity with the subject matter; weakness in critical and analytic skills; limited, or irrelevant use of literature.

Assessment Task

Term Paper (for students admitted before Semester A 2022/23 and in Semester A 2024/25 & thereafter)

Excellent

(A+, A, A-) Strong evidence of original thinking; good organization, capacity to analyse and synthesize; superior grasp of subject matter; evidence of extensive knowledge base.

Good

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Marginal

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Failure

(F) Little evidence of familiarity with the subject matter; weakness in critical and analytic skills; limited, or irrelevant use of literature.

Assessment Task

Homework (for students admitted before Semester A 2022/23 and in Semester A 2024/25 & thereafter)

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Good

(B+, B, B-) Evidence of grasp of subject, some evidence of critical capacity and analytic ability; reasonable understanding of issues; evidence of familiarity with literature.

Fair

(C+, C, C-) Student who is profiting from the university experience; understanding of the subject; ability to develop solutions to simple problems in the material.

Marginal

(D) Sufficient familiarity with the subject matter to enable the student to progress without repeating the course.

Failure

(F) Little evidence of familiarity with the subject matter; weakness in critical and analytic skills; limited, or irrelevant use of literature.

Assessment Task

Midterm Examination (for students admitted from Semester A 2022/23 to Summer Term 2024)

Excellent

(A+, A, A-) Strong evidence of original thinking; good organization, capacity to analyse and synthesize; superior grasp of subject matter; evidence of extensive knowledge base.

Good

(B+, B) Evidence of grasp of subject, some evidence of critical capacity and analytic ability; reasonable understanding of issues; evidence of familiarity with literature.

Marginal

(B-, C+, C) Sufficient familiarity with the subject matter to enable the student to progress without repeating the course.

Failure

(F) Little evidence of familiarity with the subject matter; weakness in critical and analytic skills; limited, or irrelevant use of literature.

Assessment Task

Term Paper (for students admitted from Semester A 2022/23 to Summer Term 2024)

Excellent

(A+, A, A-) Strong evidence of original thinking; good organization, capacity to analyse and synthesize; superior grasp of subject matter; evidence of extensive knowledge base.

Good

(B+, B) Evidence of grasp of subject, some evidence of critical capacity and analytic ability; reasonable understanding of issues; evidence of familiarity with literature.

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Assessment Task

Homework (for students admitted from Semester A 2022/23 to Summer Term 2024)

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Part III Other Information

Keyword Syllabus

1. Games with Simultaneous Moves and Complete Information
a. Normal-form Representation
b. Nash Equilibrium
c. Mixed Strategies

2. Games with Sequential Moves and Complete Information
a. Extensive-form Representation
b. Subgame-perfect Nash Equilibrium
c. Repeated Game
d. Stationary Equilibrium

3. Games with Simultaneous Moves and Incomplete Information
a. Static Bayesian Games
b. Bayesian Nash Equilibrium
c. Auctions

4. Games with Sequential Moves and Incomplete Information
a. Perfect Bayesian Equilibrium
b. Signalling
c. Cheap Talks

Reading List

Compulsory Readings

	Title
1	Gibbons, R. (1992) Game Theory for Applied Economists, Princeton
2	Salanie, B. (2005) The Economics of Contracts: A Primer, 2nd edition, MIT press

Additional Readings

	Title
1	Bolton, P. and M. Dewatripont (2004) Contract theory, MIT press
2	Bo#rgers, T. (2015) An Introduction to the Theory of Mechanism Design, Oxford
3	Fudenberg, D. and J. Tirole (1991) Game theory, MIT press.
4	Laffont, J.-J. and D. Martimort (2002) The Theory of Incentives, Princeton
5	Maschler, M., E. Solan, and S. Zamir (2013) Game Theory, Cambridge
6	Myerson, R. B (1991) Game Theory, Harvard
7	Osborne, M. J. and A. Rubinstein (1994) A Course in Game theory, MIT Press